

Could Santa Screw Up Christmas?

By Kate Vitasek and Joseph Tillman, Supply Chain Visions

For many people, it's not Christmas without watching *A Christmas Story*. *A Christmas Story* is a movie about a boy named Ralphie who goes to great lengths to get his prized Red Ryder BB gun for Christmas. But what if Santa screwed up on Christmas? What if Ralphie hadn't received his beloved Red Ryder carbine action, 200 shot range model BB gun with a compass in the stock and a thing that tells time?¹ For Ralphie, there is no room for compromise in his definition of a perfect order. His Christmas present had to be 1) delivered on Christmas morning, 2) a Red Ryder carbine action BB gun, 3) a 200 shot range model, 4) equipped with a compass in the stock, and 5) complete with a thing that tells time. If any of these elements were missing, Ralphie would not be a very happy customer. And if Santa misses any component of Ralphie's order, Santa will receive an F on his supplier scorecard.

What Is the Perfect Order?


The perfect order is a unique concept because it encapsulates the total impact of an incorrect order in a single metric. A perfect order is an order that is on time, complete, damage free, and accompanied by accurate documentation. APQC defines it as perfect order performance, which "refers to flawlessly taking and fulfilling a customer order and includes taking the order correctly, allocating inventory immediately, delivering product on time, and sending an accurate invoice." Other organizations call it perfect order index (POI), and for this article we will refer to it as POI. POI is calculated by multiplying the key metrics related to each of the four major components of a perfect order together: % delivered on-time x % shipped complete x % shipped damage free x % correct documentation.

The perfect order index is similar in nature to a well-known metric: first pass yield. First pass yield is where each production process is measured and then total "yield" or fallout of the entire process is calculated as an index. In a similar fashion, the perfect order index is established by *multiplying* each component of the perfect order with the other three.

The Debate

There has been much debate about the definition and calculation of the perfect order. The Warehousing Education and Research Council (WERC), the Material Handling Industry of America (MHIA), and the Manufacturing Enterprise Solutions Association (MESA) all agree with the POI definition and with APQC's calculation. However, other organizations, specifically the Supply Chain Council, define it as perfect order fulfillment. Perfect order fulfillment, as defined by the Supply Chain Council, is "the percentage of orders meeting delivery performance with complete and accurate documentation and no

¹ For those needing a memory jogger, a "thing that tells time" is a sundial in the stock of the BB gun. The Red Ryder model cited in the movie did not actually exist in stores, so Santa really had to work some magic.



delivery damage.” Perfect order fulfillment is calculated as the total number of perfect orders divided by the total number of orders. The Supply Chain Council does *not* use the multiplier effect in its calculation.

Although some have challenged the “multiplier” effect, we argue that multiplying is the purest way to look at an order from your customer's perspective. Did Ralphie get *each* of the things he was looking for? If not, Santa gets an F, even if he failed on only one of the components. WERC, MHIA, and MESA have settled on this definition due to its purity; it tells you that your customer is not happy—from the customer's perspective, not the shipper's or supplier's perspective. Bottom line: Did Santa succeed in meeting Ralphie's expectations? Using the APQC definition with the multiplier effect, it is clear. Using the Supply Chain Council's definition, Santa could “partially” succeed. We advocate the former because getting partial credit gives a false sense of success.

Ralphie's Order

Let's take a look at Ralphie's definition of a perfect order. For Santa to be successful, he will need to deliver a Red Ryder carbine action 200 shot range model BB gun with a compass in the stock and a thing that tells time on Christmas morning. If Santa left Rudolph at home and the fog in Northern Indiana was thicker than he expected, causing Ralphie's order to arrive after lunch on Christmas Day, Santa would receive a zero for on-time delivery. This means Santa's POI for Ralphie's order would be 0 percent.


Another thought on Ralphie's order: What if the BB gun Santa left for Ralphie didn't have “a thing that tells time”? Was it really *that* important to Ralphie? He just wanted a BB gun, right? Wrong! His preference was for the BB gun to have “a thing that tells time.” It might not have been high on his priority list, and he might even think, “Okay, whatever—I'm still going to enjoy the gun.” But he will not be truly happy. Even though Santa delivered the right product at the right time, damage free, the order was incomplete. Again, Santa would be performing at 0 percent.

It's in the Bag

Now, let's take this analogy one step further and look at how Santa did the entire night. Let's assume Santa has 100 little boys and girls out there anxiously waiting for their orders on Christmas morning. We'll pretend that Santa's head wasn't in the game this year. For example, he left Rudolph at the North Pole and, because of fog, was late getting 25 of the gifts to their destinations. The gifts arrived on Christmas Day, but after lunch. Santa's on-time delivery would be 75 percent. Since Santa was in such a big hurry, he goofed and sat on his bag of gifts. Twenty-five of those gifts were damaged. His score for damage-free would be 75 percent. Rolling this analogy along, 25 orders were incomplete, and 25 orders were incorrectly documented. Santa's POI would be 31.6 percent. It would not be zero!²

Why not zero? First, multiple orders had more than one issue. If one component is missed, then the order is imperfect. However, we cannot, nor should we, stop after that one component in determining

² Santa's performance is calculated as $(.75 \times .75 \times .75 \times .75) \times 100 = 31.6$ percent



performance. The POI looks at each individual component of the order. By multiplying together the performance of each component, we arrive at a more robust and accurate calculation of performance. The multiplier effect takes into account that more than one component of an order can go wrong for the same order.

Using the same example, the performance for perfect order fulfillment using the Supply Chain Council's definition would be 50 percent. Why so much higher? Perfect order fulfillment stops if only one component is missed. If an order is late and damaged, it only counts once against your performance score, thus inflating your score. Perfect order fulfillment cannot calculate an accurate indication of your actual performance. Using the Supply Chain Council's SCOR®, you will need almost 16 different metrics to accurately assess your performance. And to boot, this approach looks at the order only from the shipper's or supplier's perspective.

The true power of the multiplier effect is that an organization cannot focus on only one component of the POI to improve. Doing so will result in incremental performance improvement, and customer satisfaction will continue to suffer.

The Customer-focused Measure

Earlier, we stated that the multiplier effect is the purest way to look at an order from the customer's perspective. Using the POI allows suppliers to more easily refine their customers' wants and accurately measure their own performance. For example, Ralphie's order has five components for Santa to meet. Should this be unusual? Absolutely not! Santa is doing the right thing by measuring the perfect order in light of his customer's preferences. And let's not forget that the POI is a high-level key performance indicator. Its purpose is to help better diagnose problems within supply chains to drive better customer satisfaction.

If you don't have a definition for your customer's perfect order, we recommend that you default to the APQC definition, as it is hard to argue that most customers want exactly what they ordered, when they wanted it, how they wanted it, with an accurate invoice. If you think this definition is too strict, we encourage you to think of Ralphie. Achieving the perfect order is not out of reach. Just ask Santa.³

³ Authors' note: Defining measurements can often be political. We realize that some may not agree with APQC's definition or the Supply Chain Council's definition. The simple fact that you are reading this article and *trying* to measure your performance is a good thing. At the end of the day, use the definition of success that you feel best meets your customers' definition of success.



ABOUT THE AUTHORS

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ABOUT APQC

For more than 30 years, APQC has been on the leading edge of improving performance and fostering innovation around the world. APQC works with organizations across all industries to find practical, cost-effective solutions to drive productivity and quality improvement. We are a member-based nonprofit currently serving more than 500 organizations in all sectors of business, education, and government.

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